

CLAIMS

WHAT IS CLAIMED IS:

- 1 1. A method for identifying manufacturing anomalies in a manufacturing system comprising
2 a plurality of products which are manufactured with a plurality of manufacturing
3 parameters, the method comprising the steps of:
4 storing the plurality of manufacturing parameters in a data warehouse;
5 applying a data mining program to perform the steps of:
6 analyzing the stored manufacturing parameters to define a first normal
7 manufacturing parameter subset;
8 detecting at least one of the plurality of manufacturing parameters that is excluded
9 from the first normal subset; and
10 reporting the at least one detected manufacturing parameter.
- 1 2. The method of claim 1, wherein the step of applying the data mining program comprises
2 detecting that a plurality of the manufacturing parameters are excluded from the first
3 normal subset.
- 1 3. The method of claim 2, wherein the step of applying the data mining program further
2 comprises analyzing the detected plurality of manufacturing parameters to define a
3 second normal subset of the detected plurality of manufacturing parameters.
- 1 4. The method of claim 3, comprising reporting the second normal subset of manufacturing
2 parameters.
- 1 5. The method of claim 4, wherein the first normal subset of manufacturing parameters is
2 defined by categorizing the manufacturing parameters in an n-dimensional space.

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- 1 7. A system for identifying manufacturing anomalies in a manufacturing system comprising
2 a plurality of products which are manufactured with a plurality of manufacturing
3 parameters, comprising:
4 a data warehouse for storing the plurality of manufacturing parameters;
5 a data mining program applied to the data warehouse for analyzing the stored
6 manufacturing parameters to define a first normal manufacturing parameter subset and
7 detecting at least one of the plurality of manufacturing parameters that is excluded from
8 the first normal subset; and
9 a reporting means for reporting the at least one detected manufacturing parameter.
- 1 8. The system of claim 7, wherein the data mining program is for detecting that a plurality
2 of the manufacturing parameters are excluded from the first subset.
- 1 9. The system of claim 8, wherein the data mining program is further for analyzing the
2 detected plurality of manufacturing parameters to define a second normal subset of the
3 detected plurality of manufacturing parameters.
- 1 10. The method of claim 9, wherein the reporting means is for reporting the second normal
2 subset of manufacturing parameters.
- 1 11. The system of claim 10, wherein the data mining program is for defining the first normal
2 subset of manufacturing parameters by categorizing the manufacturing parameters in an
3 n-dimensional space.

- 1 12. The system of claim 11, wherein the data mining program is for defining the second
2 normal subset of manufacturing parameters by categorizing the manufacturing
3 parameters excluded from the first normal subset in the n-dimensional space.